

We Claim:

1. A cooling system for cooling a circuit board including a first heat source and a second heat source, wherein the first and second heat sources extend to different heights with respect to the circuit board, comprising:

a layer of thermally conductive material applied to the circuit board, the layer in conforming thermal contact with the first and second heat sources; and

a thermal conduit in thermal contact with the layer, the thermal conduit being configured for dissipating heat from the layer.

2. The cooling system of claim 1, wherein the layer is composed of solidified foam conformingly received over the first and second heat sources.

3. The cooling system of claim 2, wherein the layer is composed of solidified foam formed by applying a coating of foam over the first and second heat sources prior to its solidification.

4. The cooling system of claim 1, wherein the thermal conduit includes
a cooled body; and
an actuator configured to actuate the cooled body into conforming thermal contact with the layer.

5. The cooling system of claim 4, wherein the cooled body is a roll bond panel.

6. The cooling system of claim 4, wherein the cooled body is a plate defining passageways configured for cooling fluid.

7. The cooling system of claim 6, and further comprising a pump and a heat exchanger in fluid communication with the passageways defined in the plate to form a liquid loop cooling system.

5
Sub
Be

100111595-1

8. The cooling system of claim 1, wherein the layer defines passageways configured for cooling fluid.

9. The cooling system of claim 8, and further comprising a pump and a heat exchanger in fluid communication with the passageways defined in the layer to form a liquid loop cooling system

10. The cooling system of claim 1, wherein the thermal conduit includes a cooled body thermodynamically connected to the layer; and an actuator configured to actuate the layer into conforming thermal contact with the first and second heat sources.

11. The cooling system of claim 10, wherein the layer is composed of foam formed by machining a solid foam body to substantially conform to the first and second heat sources.

12. The cooling system of claim 10, wherein the cooled body is a roll bond panel.

13. The cooling system of claim 10, wherein the cooled body is a plate defining passageways configured for cooling fluid.

3
Cont
Sub B2

100111595-1

14. A cooling system for cooling a circuit board including a first heat source and a second heat source, wherein the first and second heat sources extend to different heights with respect to the circuit board, comprising:

a means for transferring heat, applied to the circuit board, the means for transferring being in conforming thermal contact with the first and second heat sources; and

a thermal conduit in thermal contact with the means for transferring heat, the thermal conduit being configured for dissipating heat from the means for transferring heat.

15. A cooling system for cooling a circuit board including a first heat source and a second heat source, wherein the first and second heat sources extend to different heights with respect to the circuit board, comprising:

a layer of thermally conductive material applied to the circuit board, the layer in conforming thermal contact with the first and second heat sources; and

a thermal conduit in thermal contact with the layer, the thermal conduit being configured for dissipating heat from the layer.

16. A circuit board, comprising:

a board configured for electrically connecting components for communication;

a first component heat source mounted on and in electrical communication with the board;

a second component heat source mounted on and in electrical communication with the board; and

a layer of thermally conductive material attached to and in conforming thermal contact with the first and second heat sources.

17. The circuit board of claim 16, wherein the layer is composed of solidified foam conformingly received over the first and second heat sources.

Cont
Sub B2

100111595-1

18. The circuit board of claim 17, wherein the layer is composed of solidified foam formed by applying a coating of foam over the first and second heat sources prior to its solidification.

19. The circuit board of claim 16, wherein the thermal conduit includes a cooled body; and an actuator configured to actuate the cooled body into conforming thermal contact with the layer.

20. The circuit board of claim 19, wherein the cooled body is a roll bond panel.

21. The circuit board of claim 19, wherein the cooled body is a plate defining passageways configured for cooling fluid.

22. The circuit board of claim 21, and further comprising a pump and a heat exchanger in fluid communication with the passageways defined in the plate to form a liquid loop cooling system.

23. The circuit board of claim 16, wherein the layer defines passageways configured for cooling fluid.

24. The circuit board of claim 23, and further comprising a pump and a heat exchanger in fluid communication with the passageways defined in the layer to form a liquid loop cooling system.

CONFIDENTIAL

Comp 32
Sub 12

25. A method of making a circuit board, comprising:

mounting a first component heat source and a second component heat source to be in electrical communication with a board configured for electrically connecting components; and

5 applying a layer of non-solidified thermally conductive foam over the first and second heat sources such that the layer solidifies in thermal contact with the first and second heat sources.

ADD
B3

100111595-1